AMENDED CLAIMS

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Claims

1. A printing press (01) with several printing groups (04), which generate at least one printed image (11) on a material (03) to be imprinted, wherein each printing group (04) respectively consists of an ink-transferring cylinder (06) and a forme cylinder (07), wherein the ink-transferring cylinder (06) transfers ink dots for a common print image (11) to the material (03) to be imprinted in a production flow (P) of the material (03) to be imprinted through printing groups (04) arranged downstream of each other wherein, between one ink-transferring cylinder (06) and an ink-transferring cylinder (06) following in the production flow (P), the material (03) to be imprinted has a longitudinal elongation with a factor DL along the production flow (P), and/or transversely to the production flow (P) a transverse elongation with a factor DQ wherein, in its axial direction (X), the forme cylinder (07) of at least two printing groups (04) arranged one behind the other has respectively at least one printing forme (08) with at least two print image locations (09), wherein each print image location (09) respectively correlates with a print image (11) created on the material (03) to be imprinted, wherein each print image location (09) has a length (L) in the circumferential direction (Y) of the forme cylinder (07), and in its axial direction (X) a width (B), wherein an image application system

forms the print image locations (09) characterized in that the lengths (L) of two print image locations (09) arranged side-by-side on the same forme cylinder (07) in the axial direction (X) of the latter differ from each other by a factor FL, and/or the widths (B) of two print image locations (09) arranged side-by-side on the same forme cylinder (07) in the axial direction (X) of the latter differ from each other by a factor FB, wherein the factor FL relating to the length (L) of the print image location (09) is a function of the factor DL of the longitudinal elongation, and the factor FB relating to the width (B) of the print image location (09) is a function of the factor DQ of the transverse elongation, wherein the length (L) and/or the width (B) of at least the print image locations (09) arranged side-by-side on the same forme cylinder (07) in the axial direction (X) of the latter

is designed and arranged by the image application system as a function of the factor DL of the longitudinal elongation and/or the factor DQ of the transverse elongation.

2. The printing press in accordance with claim 1, characterized in that print image locations (09) arranged next to each other on the forme cylinder (07) in the axial direction of the latter are respectively arranged on at least one printing forme (08).

3. A printing press (01) with several printing groups (04), which generate at least one printed image (11) on a material (03) to be imprinted, wherein each printing group (04) respectively consists of an ink-transferring cylinder (06) and a forme cylinder (07), wherein the ink-transferring cylinder (06) transfers ink dots for a common print image (11) to the material (03) to be imprinted in a production flow (P) of the material (03) to be imprinted through printing groups (04) arranged downstream of each other wherein, between one ink-transferring cylinder (06) and an ink-transferring cylinder (06) following in the production flow (P), the material (03) to be imprinted has a longitudinal elongation with a factor DL along the production flow (P), and/or transversely to the production flow (P) a transverse elongation with a factor DQ wherein, in its axial direction (X), the forme cylinder (07) of at least two printing groups (04) arranged one behind the other has respectively at least one printing forme (08)

with at least two print image locations (09), wherein each print image location (09) respectively correlates with a print image (11) created on the material (03) to be imprinted, wherein each print image location (09) has a length (L) in the circumferential direction (Y) of the forme cylinder (07), and in its axial direction (X) a width (B), wherein an image application system forms the print image locations (09) characterized in that a position (X1, Y1) of a center point (S) of a print image location (09) differs in comparison with a position (X2, Y2) of a center point (S) of another print image location (09) arranged on the same forme cylinder (07) in the axial direction (X) of the latter, wherein these comparable print image locations (09) have the same

length (L) and width (B), wherein the print image locations (09) arranged side-by-side on the same forme cylinder (07) are each arranged on a printing forme (08), wherein the printing formes (08) which are arranged on the same forme cylinder (07), but have print image locations (09) which differ in the position (X1, Y1), (X2, Y2) of their center points (S), are arranged aligned with each other in the axial direction (X) of the respective forme cylinder (07), wherein at least the respective position (X1, Y1), (X2, Y2) of the center point (S) of different print image locations (09), which are arranged side by side on the same forme cylinder (07) in the axial direction (X) of the latter, are arranged by the image application system on the respective printing forme (08) as a function of the factor DL of the longitudinal elongation and/or the factor DQ of the transverse elongation.

4. The printing press (01) in accordance with claim 2, characterized in that the print image locations (09), which are arranged next to each other on the form cylinders (07) in the axial direction (X) of the latter, are respectively arranged on the same printing forme (08).

5. The printing press (01) in accordance with claim 3, characterized in that the positions (X1, Y1), (X1, X2) of the center point (S) of two print image locations (09), which follow each other in the production flow (P) of the material (03) to be

imprinted differ from each other as a function of the factor DL of the longitudinal elongation, and/or of the factor DQ of the transverse elongation.

6. The printing press (01) in accordance with claim 1, characterized in that the factor DL of the longitudinal elongation increases the length (L) of two print image locations (09) arranged side-by-side on the same forme cylinder (07), and/or the factor DQ of the transverse elongation increases the width (B) of two print image locations (09) arranged side-by-side on the same forme cylinder (07).

7. The printing press (01) in accordance with claim 1 or 3, characterized in that the factor DL of the longitudinal

elongation and/or the factor DQ of the transverse elongation is a function of a mechanical elongation and/or an elongation because of the dampening of the material (03) to be imprinted.

8. The printing press (01) in accordance with claim 1 or 3, characterized in that the factor DL of the longitudinal elongation and/or the factor DQ of the transverse elongation can be changed.

9. The printing press (01) in accordance with claim 1 or 3, characterized in that the material (03) to be imprinted is embodied as a web (03) of material.

10. The printing press (01) in accordance with claim 1 or 3, characterized in that the forme cylinder (07) has six print image locations (09) in its axial direction (X).

11. The printing press (01) in accordance with claim 1 or 3, characterized in that the forme cylinder (07) has two print image locations (09) in its circumferential direction (Y).

12. The printing press (01) in accordance with claim 1 or 3, characterized in that each printing forme (08) has only a single print image location (09).

13. The printing press (01) in accordance with claim 1 or 3, characterized in that the forme cylinder (07) has six printing formes (08) in its axial direction (X).

14. The printing press (01) in accordance with claim 1 or 3, characterized in that the forme cylinder (07) has two printing formes (08) in its circumferential direction (Y).

15. The printing press (01) in accordance with claim 1 or 3, characterized in that the ink-transferring cylinder (06) of

different printing groups (04) transfers differently arranged ink dots for a common print image (11).

16. The printing press (01) in accordance with claim 1 or 3, characterized in that ink dots of cylinders (06) transferring different ink differ in color tone.

17. The printing press (01) in accordance with claim 1 or 3, characterized in that at least four printing groups (04) are provided in the production flow (P) of the material (03) to be imprinted, wherein their ink-transferring cylinders (06) for the common print image (11) each transfer color tones which differ from each other.

18. The printing press (01) in accordance with claim 1 or 3, characterized in that the ink-transferring cylinder (06) is embodied as a transfer cylinder (06) operating in accordance with the offset printing method.

19. The printing press (01) in accordance with claim 1 or 3, characterized in that the printing groups (04) imprint the material (03) to be imprinted in accordance with recto and verso printing.

20. The printing press (01) in accordance with claim 1 or 3, characterized in that two ink-transferring cylinders (06) roll

off on each other in at least one printing group (04), wherein the material (03) to be imprinted is conducted through the roll-off area of these two ink-transferring cylinders (06).

21. The printing press (01) in accordance with claim 1 or 3, characterized in that the printing press (01) is designed as a newspaper printing press (01).

22. The printing press (01) in accordance with claim 1 or 3, characterized in that at least one holding device is provided,

which is arranged in at least one forme cylinder (07), wherein the holding device holds at least one printing forme (07) arranged on the forme cylinder (07).

23. The printing press (01) in accordance with claim 1 or 3, characterized in that at least one register pin arranged in a forme cylinder (07) is provided, wherein the register pin aligns at least one printing forme (08) arranged on the forme cylinder (07) in a direction (X) which is axial in respect to the forme cylinder (07).

24. The printing press (01) in accordance with claim 22 or 23, characterized in that the holding device or the register pin displaces at least one printing forme (08) in the axial direction (X) of the forme cylinder (07) as a function of the factor DQ of the transverse elongation.

25. The printing press (01) in accordance with claim 22 or 23, characterized in that at least one controllable actuator is arranged in the forme cylinder (07), wherein the actuator displaces the holding device or the register pin.

26. The printing press (01) in accordance with claim 22 or 23, characterized in that at least one holding device or at least one register pin are assigned in the forme cylinder (07) of each printing forme (08).

27. The printing press (01) in accordance with claim 1 or, 3, characterized in that each printing forme (08) can be individually shifted in the axial direction (X) in respect to the forme cylinder (07).

28. The printing press (01) in accordance with claim 1 or 3, characterized in that the forme cylinder (07) and/or the ink-transferring cylinder (06) of at least one printing group (04) of

two printing groups arranged one behind the other is driven by a controllable drive mechanism.

29. The printing press (01) in accordance with claim 1 or 3, characterized in that a phase relation assumed between the forme cylinders (07) and/or by the ink-transferring cylinders (06) of at least two printing groups (04) is controlled as a function of the factor DL of the longitudinal elongation.

30. The printing press (01) in accordance with claim 25 or 29, characterized in that the actuator and/or the phase relation of the forme cylinders (07) and/or of the ink-transferring cylinders (06) can be continuously controlled.

31. The printing press (01) in accordance with claim 25 or 29, characterized in that the actuator and/or the phase relation of the forme cylinders (07) and/or of the ink-transferring cylinders (06) can be controlled while the production of the printing press (01) is running.

32. The printing press (01) in accordance with claim 25, 28 or 29, characterized in that the actuator and/or the phase relation of the forme cylinders (07) and/or of the ink-transferring cylinders (06) can be controlled from a control console assigned to the printing press (01).

33. The printing press (01) in accordance with claim 1, characterized in that a memory is provided for at least one of the printing groups (04), wherein the memory respectively contains at least a value for the factor FL of the length (L) of two print image locations (09) arranged side-by-side on the same forme cylinder (07), and/or at least a value for the factor FB of the width (B) of two print image locations (09) arranged side-by-side on the same forme cylinder (07).

34. The printing press (01) in accordance with claim 5, characterized in that a memory is provided for at least one of the printing groups (04), wherein the memory respectively contains at least a value for the different positions (X1, Y1), (X2, Y2) of the center (S) of two print image locations (09) following each other in the production flow (B) of the material (03) to be imprinted.

35. The printing press (01) in accordance with claim 3, characterized in that a memory is provided for at least one of the printing groups (04), wherein the memory respectively contains at least a value for the different positions (X1, Y1), (X2, Y2) of the center (S) of two print image locations (09) arranged side-by-side on the same forme cylinder (07).

36. The printing press (01) in accordance with claim 33 or 34, characterized in that a control unit controls the actuator and/or the phase relation of the forme cylinders (07) and/or of the ink-transferring cylinders (06) as a function of the stored value for the factor FL and/or the factor FB and/or the positions (X1, Y1), (X2, Y2) of the center (S).

37. A method for compensating a longitudinal elongation and/or a transverse elongation of a material (03) to be imprinted, wherein several printing groups (04) of a printing press (01), which are arranged one behind the other in a production flow (P)

of the material (03) to be imprinted, transfer ink dots for a common print image (11) to the material (03) to be imprinted by means of an ink-transferring cylinder (06) which is a part of each printing group (04) wherein, between an ink-transferring cylinder (06) and an ink-transferring cylinder (06) following the first in the production direction (P) of the material (03) to be imprinted, the material (03) to be imprinted stretches in the direction of the production flow (P) by a factor DL and/or transversely in respect to the production flow (P) by a factor DB, wherein at least one forme cylinder (07) respectively works together with each ink-transferring cylinder (06), wherein the print image (11)

is correlated with a print image location (09), which has a length (L) in the circumferential direction (Y) of the forme cylinder (07) and a width (B) in its axial direction (X), wherein the length (L) of at least one print image location (09) of a printing forme (08) is changed in comparison with the length (L) of a print image location (09), which is correlated with the same print image (11) of another printing forme (08) arranged on another forme cylinder (07), by a factor FL, and/or the width (B) of at least one print image location (09) of a printing forme (08) is changed in comparison with the width (B) of a print image location (09), which is correlated with the same print image (11) of another printing forme (08) arranged on another forme cylinder (07), by a factor FB, wherein the print image locations (09) are formed by an image application system, characterized in that the length (L) of two print image locations (09) arranged side-by-side on the same forme cylinder (07) in its axial direction (X) is differently designed in respect to each other by a factor FL, and/or the width (B) of two print image locations (09) arranged side-by-side on the same forme cylinder (07) in its axial direction (X) is differently designed in respect to each other by a factor FB by the image application system.

38. The method in accordance with claim 37, characterized in that a position (X1, Y1) of a center point (S) of at least one print image location (09) of a printing forme (08) is changed in comparison with the position (X2, Y2) of a center point (S) of a

print image location (09) correlated with the same print image (11) of another printing forme (08) arranged on another forme cylinder (07) at the same position on the forme cylinder (07).

39. A method for compensating a longitudinal elongation and/or a transverse elongation of a material (03) to be imprinted, wherein several printing groups (04) of a printing press (01), which are arranged one behind the other in a production flow (P) of the material (03) to be imprinted, transfer ink dots for a

common print image (11) to the material (03) to be imprinted by means of an ink-transferring cylinder (06) which is a part of each printing group (04) wherein, between an ink-transferring cylinder (06) and an ink-transferring cylinder (06) following the first in the production direction (P) of the material (03) to be imprinted, the material (03) to be imprinted stretches in the direction of the production flow (P) by a factor DL and/or transversely in respect to the production flow (P) by a factor DB, wherein at least one forme cylinder (07) respectively works together with each ink-transferring cylinder (06), wherein the print image (11) is correlated with a print image location (09), which has a length (L) in the circumferential direction (Y) of a printing forme (08) arranged on the forme cylinder (07) and a width (B) in its axial direction (X), wherein a position (X1, Y1) of a center point (S) of at least one print image location (09) of a printing forme (08) is changed in comparison with the position (X2, Y2) of a center point (S) of a print image location (09) correlated with the same print image (11) of another printing forme (08) arranged on another forme cylinder (07) at the same position on the forme cylinder (07), wherein the print image locations (09) are formed by an image application system, characterized in that at least the position (X1, Y1) of a center point (S) of a print image location (09) is differently arranged by the image application system in comparison with a position (X2, Y2) of a center point (S) of another print image location (09) arranged on the same forme cylinder (07) in the axial direction (X) of the latter, wherein

these comparable print image locations (09) have the same length (L) and width (B), wherein the print image locations (09) arranged side-by-side on the same forme cylinder (07) are each arranged on a printing forme (08), wherein the printing formes (08) which are arranged side-by-side on the same forme cylinder (07) are respectively arranged on a printing forme (08), wherein the printing formes (08) which are arranged side-by-side on the same forme cylinder (07) with the print image locations (09) which differ in the position (X1, Y1), (X2, Y2) of their center points (S), are arranged aligned with each other in the axial direction (X) of the respective forme cylinder (07)

40. The method in accordance with claim 39, characterized in that the length (L) of at least one print image location (09) of a printing forme (08) is changed in comparison with the length (L) of a print image location (09), which is correlated with the same print image (11) of another printing forme (08) arranged on another forme cylinder (07), by a factor FL, and/or the width (B) of at least one print image location (09) of a printing forme (08) is changed in comparison with the width (B) of a print image location (09), which is correlated with the same print image (11) of another printing forme (08) arranged on another forme cylinder (07), by a factor FB.

41. The method in accordance with claim 37 or 40, characterized in that the length (L) and/or the width (B) and/or the position (X1, Y1), (X2, Y2) of the center point (S) of the print image location (09) is changed by means of the use of the factor DL of the longitudinal elongation and/or the factor DQ of the transverse elongation.

42. The method in accordance with claim 38 or 39, characterized in that the length (L) and/or the width (B) and/or the position (X1, Y1), (X2, Y2) of the center point (S) of the print image location (09) is changed as a function of the position of the printing forme (08) on the forme cylinder (07) containing the printing forme (08) with the changed print image location (09).

43. The method in accordance with claim 37 or 40, characterized in that a value of the factor FL, which changes the length (L), is determined as a function of the factor DL of the longitudinal elongation, and a value of the factor FB, which changes the width, is determined as a function of the factor DQ of the transverse elongation.

44. The method in accordance with one of claims 37 to 40, characterized in that the value of the factor FL, which changes the length (L), and/or the value of the factor FB, which changes the width (B), and/or a new position (X2, Y2) of the center point (S) of the print image location (09) of a printing forme (08) on one of the forme cylinders (07) is determined as a function of the

print image location (09) of another printing forme (08) arranged on another forme cylinder (07) at the same position of the forme cylinder (07).

45. The method in accordance with one of claims 41 to 44, characterized in that, on a forme cylinder (07) with a printing forme (08) with a print image location (09) to be changed, a printing forme (08) with the changed print image location (09) is arranged at the same position of the forme cylinder (07).

46. The method in accordance with claim 43 or 44, characterized in that a desired value of the factor FL changing the length (L), and/or a desired value of the factor FB changing the width (B), and/or a desired value of the position of the center point (S) of a print image location (09) of a printing forme (08), is continuously determined.

47. The method in accordance with claim 45, characterized in that a printing forme (08) containing the changed print image location (09) is arranged on at least one of the forme cylinders (07) if an actual value of the factor FL changing the length (L), and/or a actual value of the factor FB changing the width (B), and/or an actual value of the position (X1, Y1), (X2, Y2) to be changed of the center point (S) of the print image location (09) of a printing forme (08) exceeds a permissible deviation from the determined desired values.

48. The method in accordance with claim 46, characterized in that the desired values of the color tones transferred by each ink-transferring cylinder (06) are determined.

49. The method in accordance with claim 46, characterized in that the desired values for each forme cylinder (07) of the printing groups (04) which follow each other in the production flow (P) of the material (03) to be imprinted are determined.

50. The method in accordance with claim 46, characterized in that the desired values for each position of a printing forme (08) arranged on one of the forme cylinders (07) are determined.

51. The method in accordance with claim 46, characterized in that the determined values are stored in a memory.

52. The method in accordance with one of claims 37 to 40, characterized in that the print image location (09) with the changed length (L), and/or with the changed width (B), and/or with the changed position (X1, Y1), (X2, Y2) of the center point (S), is arranged on the printing forme (08) with the aid of an image application system.

53. The method in accordance with claim 52, characterized in that the factor DL of the longitudinal elongation and/or the factor DQ of the transverse elongation, which change the length (L) and/or the width (B) and/or the position (X1, Y1), (X2, Y2) of the center point (S) of the print image location (09), are supplied to the image application system.

54. The method in accordance with claim 52, characterized in that the image application system provides images to the printing forme (08) as a function of the color tone of the ink-transferring cylinder (06), and/or of the arrangement of the printing group (04) with the forme cylinder (07) containing the

printing forme (08) in the production flow (P) of the material (03) to be imprinted, and/or of the position of the printing forme (08) arranged on the forme cylinder (07).

55. The method in accordance with claim 51 and 52, characterized in that the determined desired values stored in the

memory are supplied to the image application system.

56. The method in accordance with claim 37 or 39, characterized in that moisture acting on the material (03) to be imprinted and/or a mechanical elongation acting on the material (03) change the respective values of the factor DL of the longitudinal elongation and/or the factor DQ of the transverse elongation.